II.B.2.N.b.12. POPULUS FREMONTII TEMPORARILY FLOODED WOODLAND ALLIANCE

Fremont Cottonwood Temporarily Flooded Woodland Alliance

POPULUS FREMONTII - FRAXINUS VELUTINA WOODLAND

Fremont Cottonwood - Velvet Ash Woodland

ELEMENT CONCEPT

GLOBAL SUMMARY: This is a lowland forested riparian association known from central and southeastern Arizona, southwestern New Mexico and southwestern Utah. Elevations range from 1200-1550 m . Sites are typically rocky or sandy banks of moderate-gradient streams (1.5%) that are frequently flooded (two-year recurrence interval). Soils have been reported as coarse-loamy over fragmental Typic Torrifluvents, and as cobbly riverwash, reflecting the coarse substrates of sites. *Populus fremontii* and *Fraxinus velutina* codominate young, moderate to dense canopies (>50% cover). *Acer negundo, Salix gooddingii, Juglans major, Alnus oblongifolia*, and *Celtis laevigata var. reticulata* are occasional canopy or subcanopy associates. Undergrowth is moderately diverse, but cover is low. In the shrub layer there are usually scattered individuals of *Baccharis salicifolia* and *Amorpha fruticosa*. The herbaceous layer has sparse to moderate cover. Common associates may include *Juncus saximontanus, Sphenopholis obtusata, Sporobolus cryptandrus, Muhlenbergia wrightii*, and *Datura wrightii*. Disturbed stands often have high cover of the introduced *Bromus diandrus, Bromus tectorum*, or some other exotics.

ENVIRONMENTAL DESCRIPTION

USFWS Wetland System: PALUSTRINE

Zion National Park Environment: This association occurs on sandy alluvial terraces and streambanks. Slopes are gentle to moderate at elevations around 4000 feet. On the edge of its range, in Pine Creek Wash, it occurs at a higher elevation in the cool drainage or ravine.

Global Environment: This is a lowland forested riparian association known from central and southeastern Arizona, southwestern New Mexico and southwestern Utah. Elevations range from 1200-1550 m . Sites are typically rocky or sandy banks of moderate-gradient streams (1.5%) that are frequently flooded (two-year recurrence interval). However, stands are also reported from higher elevations in cool drainages or ravines. Soils have been reported as coarse-loamy over fragmental Typic Torrifluvents, and as cobbly riverwash, reflecting the coarse substrates of sites.

VEGETATION DESCRIPTION

Zion National Park Vegetation: This association is widespread along the Virgin River in Zion Canyon, which is heavily disturbed from human activity. Herbaceous cover in the river corridor is strongly dominated by exotic species *Bromus diandrus* and *Bromus tectorum*. Native species in the understory have minimal cover and are inconsistent and, thus, cannot be described as regular inhabitants here. *Populus fremontii* is present in the floodplain and widely spaced on the riverbank. Mature trees emerge from the canopy at more than 20 m in height and contribute 10-30% foliar cover. Young cottonwood may be present in the subcanopy layer. *Acer negundo* contributes 1-20% cover in the subcanopy and usually co-exists with abundant *Fraxinus velutina*. *Quercus gambelii* in tree form may also contribute significant cover to the subcanopy. Total canopy cover is 30-60%. In some cases, it may be higher, as in Pine Creek Wash, where canopy cover is nearly 100%, and a lush, comparatively undisturbed understory exists. At this middle elevation, cool drainage, *Populus angustifolia* is a major contributor to the canopy cover.

Global Vegetation: This riparian association is characterized by an open to moderately dense canopy (20-60% cover) that is codominated by large *Populus fremontii* and *Fraxinus velutina* trees. *Acer negundo, Salix gooddingii, Juglans major, Alnus oblongifolia, Celtis laevigata var. reticulata*, and *Populus angustifolia* (at higher elevations) are occasional canopy associates, but may be more common in the subcanopy (if present). Undergrowth is moderately diverse, but cover is low. In the shrub layer there are usually scattered individuals of *Amorpha fruticosa, Baccharis salicifolia*, and several other shrubs including *Baccharis emoryi, Brickellia californica*, and *Ericameria nauseosa*. The herbaceous layer has sparse to moderate cover. Common associates may include *Juncus saximontanus, Sphenopholis obtusata, Sporobolus cryptandrus, Muhlenbergia wrightii*, and *Datura wrightii*. Disturbed stands often have high cover of the introduced *Bromus diandrus, Bromus tectorum*, or some other exotics.

Global Dynamics: Information not available.

MOST ABUNDANT SPECIES

Zion National Park

Stratum	Species
TREE CANOPY	*Acer negundo, Fraxinus velutina, Populus fremontii, Quercus gambelii*
GRAMINOID	*Bromus diandrus, Bromus tectorum*

Global

Stratum	Species
TREE CANOPY	*Acer negundo, Fraxinus velutina, Populus fremontii*

CHARACTERISTIC SPECIES

Zion National Park

Stratum	Species
TREE CANOPY	*Acer negundo, Fraxinus velutina, Populus fremontii*

Global

Stratum	Species
TREE CANOPY	*Fraxinus velutina, Populus fremontii*

OTHER NOTEWORTHY SPECIES

Global

Stratum	Species
GRAMINOID	*Bromus diandrus, Bromus tectorum*

GLOBAL SIMILAR ASSOCIATIONS:
Information not available.

GLOBAL STATUS AND CLASSIFICATION COMMENTS

Global Conservation Status Rank: G2G3.

Global Comments: Szaro (1989) describes a *Populus fremontii - Fraxinus pennsylvanica* Community Type that is synonymous. Similarly, Boles and Dick-Peddie (1983) report *Populus fremontii - Fraxinus pennsylvanica* type in the Mimbres watershed that is possibly also synonymous.

ELEMENT DISTRIBUTION

Zion National Park Range: Stands of *Populus fremontii - Fraxinus velutina* are common along the Virgin River from the top of Zion Canyon to the Visitors Center. Small stands of similar species composition occur on permanent streams in the park, specifically Pine Creek Wash, a tributary of the Left Fork of the North River.

Global Range: This association occurs in lowlands of southwestern New Mexico, southern Arizona, southwestern Utah, and may occur in western Texas.

Nations: US
States/Provinces: AZ NM TX? UT

ELEMENT SOURCES

Zion National Park Inventory Notes: Plots: RH15, RH 21, RH40, 2, 145
Classification Confidence: 2 **Identifier:** CEGL000942
REFERENCES: Boles and Dick-Peddie 1983, Bourgeron and Engelking 1994, Driscoll et al. 1984, Muldavin et al. 2000a, Szaro 1989